

### REMARKS

Applicant respectfully requests reconsideration of the subject application. In this Response, claim 1 has been amended. No claims have been added or canceled.

Applicant reserves all rights under the doctrine of equivalents.

### Rejections under 35 U.S.C. § 101

The Examiner has rejected claims 1-19 under 35 U.S.C. § 101 as not falling within one of the four statutory categories of invention.

Claim 1 has been amended to be tied to another statutory category (i.e. an apparatus) by limiting the claim to be “using a data transforming module” to transform the image data into a bit plane of first and second values and to record a second value into the bit plane using an encoder. Support for the amendment can be found on original application as submitted, page 7, lines 13-14 and page 18, lines 1-9.

Claims 2-19, dependent on independent claim 1 are now all tied to another statutory category and are hence within the statutory category of invention.

Applicant, accordingly, respectfully requests withdrawal of the rejection under 35 U.S.C. § 101.

Rejections under 35 U.S.C. § 103(a)

In the Office Action, claims 1, 4-6, 13, 20-25, and 52-53 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over U.S. Patent No. 4,546,385 to Anastassiou (hereafter “Anastassiou”) in view of U.S. Patent No. 6,771,828 to Malvar (hereafter “Malvar”). Applicant reserves the right to swear behind Malvar at a later date. Nevertheless, applicant respectfully submits that the combination does teach or suggest each and every element in claims 1, 4-6, 13, 20-25, and 52-53.

Anastassiou discloses a data compression system that separates the graphics image into at least first and second bit planes respectively. Each of Anastassiou’s bit planes is a separate bi-level image that is encoded separately. Anastassiou further discloses decoding a first bit plane of an image.

Malvar discloses a progressive image compression technique which does not use data-dependent data structures. Specifically, the method disclosed in Malvar uses a wavelet transform technique followed by a quantization and entropy encoding [Malvar column 1 line 52-53]. Malvar disclosed encoding data by generating coefficients using a hierarchical lapped biorthogonal transform (LBT), reorders the coefficients in a data-independent manner into groups of similar data, and encodes the reordered coefficients using adaptive run-length encoding. In addition, Malvar discloses decoding this data and using multiple bit planes.

Claim 1, as amended, reads as follows:

A method for compressing image data of an image, comprising:  
transforming the image data into a bit plane of first and second values using a data transforming module;  
comparing each image element with a previous image element and if they are equal, recording a first value into a bit plane, and if they are not equal, recording a second value into the bit plane using an encoder; and  
encoding repeating first and second values in the bit plane into a bit plane index, wherein the compressed image is able to be decompressed using the bit plane index and the bit plane.

(claim 1, as amended) (emphasis added).

Applicant respectfully submits that the combination of Anastassiou and Malvar is improper. The Examiner asserts that it is obvious to incorporate the system and method for

progressively transforming coding digital data of Malvar into the data compressing method for graphic image of Anastassiou. Applicant respectfully disagrees as the bit planes of Anastassiou store pixel values, whereas Malvar does not use data-dependent data structures (Malvar, col. 3, line 15). One of skilled in the art with the knowledge of Anastassiou will not look to Malvar for knowledge of how to compress images using the process as proposed by the Examiner because the way encoding is done in Anastassiou is different from that of Malvar. Combining Anastassiou with Malvar would result in Malvar using pixel values, which is a data-dependent data structure. Thus, the principle of operation of Malvar would change. Therefore, Malvar teaches away from combining with Anastassiou and applicant respectfully submits that the combination is improper. However, suggesting that these references are combinable relies of impermissible hindsight based on the applicants' disclosure.

In addition, in claim 1, applicant claims "transforming the image data into a bit plane of first and second values." The Examiner cites Anastassiou's two bit planes as disclosing this claim element (Office Action, p. 4). However, applicant is claiming a bit plane with two values, not two bit planes as disclosed by Anastassiou. Because Anastassiou discloses two bit planes and not a bit plane with two values, applicant respectfully submits that Anastassiou does not disclose "transforming the image data into a bit plane of first and second values" as claimed in claim 1. Furthermore, because Malvar discloses multiple bit planes and not a bit plane with a first and second value, applicant respectfully submits that Malvar does not disclose this claimed element.

Even if the references are combinable, the combination lacks the element claimed by the applicants. As per above, applicants respectfully submit that the combination of Anastassiou and Malvar does not disclose "transforming the image data into a bit plane of first and second values" as claimed in claim 1.

Therefore, applicants respectfully submit that claim 1 and claim 4-6, 13, 20, and 53 that depend on claim 1 are not rendered obvious by the combination.

Claim 20, stands as follows:

A system for compressing image data of an image, comprising:

- a data transforming module to transform the image data into a bit plane of first and second values by comparing each image element with a previous image element and if they are equal, recording a first value into the bit plane, and if they are not equal, recording a second value into the bit plane;
- a data rearranging module to rearrange the transformed image data by causing elements of the image data to be repetitive;
- and an encoder to encode repeating first and second values in the bit plane into a bit plane index, wherein the compressed image is able to be decompressed using the bit plane index and the bit plane.

(Claim 20) (emphasis added).

Claim 20 specifies to “transform the image data into a bit plane of first and second values.” For similar reasons discussed above, neither Anastassiou nor Malvar discloses this claimed element.

Therefore, applicant respectfully submits that the combination of Anastassiou and Malvar is improper and does not disclose each and every element as claimed in claims 1 and 20 and claims 4-6, 13, 20-25, and 52-53 that depend on claims 1 and 20. Accordingly, applicant respectfully submits that claim 1 and claims 4-6, 13, 20-25, and 52-53 are not rendered obvious by Anastassiou and Malvar.

In the Office Action, Claims 26-40 stand rejected under 35 U.S.C. § 103 as being unpatentable over Malvar in view of U.S. Patent application No. 2004/0136457 to Funnell (hereafter “Funnell”). Applicant reserves the right to swear behind Malvar at a later date. Nevertheless, applicant respectfully submits that the combination does teach or suggest each and every element in claims 26-40.

Funnell discloses a system and method for further compression of compressed video content (Funnell [0041]). Funnell further discloses using arithmetic coding to compress a bit plane.

Claim 26, stands as follows:

- A method for decompressing compressed data, comprising:
  - run-length decoding the compressed data;
  - arithmetically decoding the compressed data;
  - reverse transforming the decoded data; and
  - rearranging the transformed decoded data into a lossless decompressed form.

(claim 26) (emphasis added).

Applicant respectfully submits that the combination of Anastassiou and Malvar is improper. The Examiner asserts that it is obvious to incorporate the arithmetic coding technique of Funnell into Malvar, because that would have allowed user of Malvar to recompress previously compressed data (convert back to the original format) with little or no loss. Recompressing data actually generates a data stream that is more compressed than the original compressed date (Funnell [0026]). Thus combining Malvar with Funnell would compress the data further and not have their data return to the original format after decompression. Therefore, the principle of operation of Malvar would change and applicant respectfully submits that the combination is improper.

Furthermore Funnell refers to the compression of video content whereas Malvar is concerned with image compression. Hence, one of skilled in the art with the knowledge of Malvar, looking to decompress an image, will not have looked to Funnell to incorporate the arithmetic coding technique of into Malvar. Therefore, Malvar teaches away from combining with Funnell. However, suggesting that these references are combinable relies of impermissible hindsight based on the applicants' disclosure.

In addition, Applicant claims "decoding the compressed data" in claim 26. Funnell discloses "recompressing" video data and decoding encoded data. Applicant respectfully submits that "recompressing" video data in Funnell cannot be properly interpreted as being equivalent to "decoding the compressed data" in claim 26. Recompressing data actually generates a data stream that is more compressed than the original compressed date (Funnell [0026]). Even though it is disclosed in Funnell that there is a step of decompressing the compressed data, the final data is not in a "decompressed form" as claimed in claim 26. The final data is still a compressed video data. In addition, Funnell discloses decoding encoded data, which is not the same as decoding compressed data. Therefore, applicant respectfully submits that Funnell does not disclose "decoding the compressed data" in claim 26.

Furthermore, Malvar discloses decoding encoded data, but does not disclose decoding compressed data. Thus, applicant respectfully submits that Malvar does not disclose “decoding the compressed data” in claim 26.

Independent claim 32 claims the same inventive features as independent claim 26, and hence for similar reasons as presented above, independent claim 32 is inventive over Funnell and Malvar.

Even if the references are combinable, the combination lacks the element claimed by the applicants. As per above, applicants respectfully submit that the combination of Malvar and Funnell does not disclose “decoding the compressed data.”

Therefore, applicant respectfully submits that the combination of Malvar and Funnell is improper and does not disclose each and every element as claimed in claim 26 and 32 and claims 27-31 and 31-40 that depend on claims 26 and 32. Accordingly, applicant respectfully submits that claims 26-40 are not rendered obvious by Malvar and Funnell.

In the Office Action, claims 2 and 14-19 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over Anastassiou, Malvar, and U.S. Patent No. 6,535,244 to Lee et al. (hereafter “Lee”). Applicant reserves the right to swear behind Malvar at a later date. Nevertheless, applicant respectfully submits that the combination does teach or suggest each and every element in claims 2 and 14-19.

Lee discloses an image stabilizing apparatus for correcting motion of a camera by using a bit-plane matching technique. The bit-plane matching technique extracts multiple bit-planes from an input digital image.

Claims 2 and 14-19 depend on claim 1. In claim 1, applicant claims “transforming the image data into a bit plane of first and second values.” As per above, neither Anastassiou nor Malvar disclose this claims element. Furthermore, because Lee discloses extracting multiple bit planes and not a bit plane with a first and second value, applicant respectfully submits that Lee does not disclose “transforming the image data into a bit plane of first and second values” as claimed in claim 1. Thus, the combination of Anastassiou, Malvar, and Lee cannot be properly interpreted as disclosing the claimed element. Therefore, applicant

respectfully submits that claims 2 and 14-19 that depend on claim 1 are not rendered obvious by the combination of Anastassiou, Malvar, and Lee.

In the Office Action, claims 3, 8, 12, 46, and 50 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over Anastassiou, Malvar, and Funnell. Applicant respectfully submits that the combination does teach or suggest each and every element in claims 3, 8, 12, 46, and 50.

Claims 3, 8, 12, 46, and 50 depend on claims 1 and 20. As discussed above, neither Anastassiou nor Malvar disclose “transforming the image data into a bit plane of first and second values” as claimed in claim 1 or to “transform the image data into a bit plane of first and second values” as claimed in claim 20. Furthermore, while Funnell discloses using arithmetic coding to compress a bit plane bitmap, Funnell is silent as to whether the bit plane is transformed into a bit plane of a first and second value. Thus, none of Anastassiou, Malvar, and Funnell can be properly interpreted as disclosing the claimed element. Therefore, applicant respectfully submits that claims 3, 8, 12, 46, and 50 which depend on claims 1 and 20 are not rendered obvious by the combination of Anastassiou, Malvar, and Lee.

In the Office Action, claims 41-45 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over Malvar, Funnell, and Anastassiou. Applicant respectfully submits that the combination does teach or suggest each and every element in claims 41-45.

Claims 41-45 depend on claim 32. In claim 32, applicant claims “decoding the compressed data.” As described above, neither Malvar nor Funnell disclose this claimed element. Because Anastassiou discloses decoding a first bit plane of an image and not compressed data as claimed, Anastassiou does not disclose the claimed element. Thus, none of Anastassiou, Malvar, and Funnell can be properly interpreted as disclosing the claimed element. Therefore, applicant respectfully submits that claims 41-45 that depend on claim 32 are not rendered obvious by the combination of Anastassiou, Malvar, and Lee.

## **SUMMARY**

Applicant respectfully submits that all rejections and objections have been overcome by the remarks.

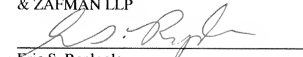
### **Deposit Account Authorization**

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then applicant hereby requests such extension.

Respectfully submitted,

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& ZAFMAN LLP

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